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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Siwen Li

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ATLANTA, GA 30339-5948

EXAMINER

PENG, KUO LIANG

ART UNIT

PAPER NUMBER

1712

MAIL DATE

DELIVERY MODE

08/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/757,661	Applicant(s) LI ET AL.	
	Examiner Kuo-Liang Peng	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/2/07 Response.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 14-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13 is/are rejected.
- 7) ☒ Claim(s) 3-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of the invention of Group IV (Claims 2 and 3-13) in the response to restriction requirement filed August 2, 2007 is acknowledged.

2. Claims 1 and 14-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse, *supra*. Now, Claims 2-13 are pending for consideration.

3. Applicants should notice that the status identifiers of the non-elected claims are improper.

Specification

4. The disclosure is objected to because of the following informalities:

In the specification (page 15, line 14), the silicone atoms in -O-Si-R⁸-Si- have open valencies. Thus, it is not clear as what the substituents on these two silicon atoms.

Appropriate correction is required.

Claim Objections

5. Claims 3-13 are objected to because of the following informalities:

In Claim 3 (lines 4-5) and Claim 12 (line 3), there are two “-O-PO₃H₂”.

Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The formula containing the moiety of -R¹-O-R⁴ is not supported by Claim 3 where the formula containing a moiety of -R¹- that is a hydrocarbon, not an ether. In addition, should the aforementioned “-R¹-O-R⁴” (a monovalent radical) be “-R¹-O-R⁴-” (a divalent radical) as indicated in the specification (page 12, Structure H)?

Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The formula containing the moiety of -R¹-Si(YQ)- is not supported by Claim 3 where the formula containing a moiety of -R¹- that is a hydrocarbon.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Examiner is not able to find a basis in the specification for a fuel cell that lacks of a **catalyst**.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 3-6 and 8-13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 3 (line 4) and 10 (line 4), it is not clear as to what "A" refers to.

In Claim 12 (lines 3-4), the silicone atoms in -O-Si-R⁸-Si- have open valencies, *supra*. Accordingly, the instant claim has not been further treated on the merits.

In Claim 13, it is not clear as to whether Applicants intend to claim a membrane or a fuel cell.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 3-9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Honma340 (US 2003/0003340).

Honma340 discloses a flexible proton electrolyte membrane comprising a hybrid inorganic-organic copolymer network derived from a composition comprising components A), B) and C). ([0091]-[0096]) Component A) can be tetraalkoxysilanes, etc. ([0099]) Component B) can be further described in [0100]-[0103], [0118], [0120]-[0125]. Component C) can be phosphoric acid or sulfonic acid. ([0110] and [0126]-[0129]) Since Honma340's composition reads on Applicants' composition described in the specification, the copolymer network contains the backbone units set forth in the instant claims.

11. Claims 3-11 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Honma138 (US 6 680 138).

Honma138 discloses a flexible proton electrolyte membrane comprising a hybrid inorganic-organic copolymer network derived from a composition comprising components A), B), C) and D). (col. 4, lines 42-47) Component A) can be exemplified as bis(triethoxysilyl)butane, bis(hydrolysable-silyl)alkylene oxide, bis(hydrolysable-silyl)polyisobutylene, bis(hydrolysable-silyl)polyethylene, etc. (col. 5, line 22 to col. 6, line 53 and col. 7, line 14 to col. 8, line 2) Component B)

can be exemplified in col. 8, lines 38-53 and col. 3, lines 7-23. Since Honma138's composition reads on Applicants' composition described in the specification, the copolymer network contains the backbone units set forth in the instant claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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August 17, 2007


Kuo-Liang Peng
Primary Examiner
Art Unit 1712